

70425

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: David Lukton Examiner #: 71263 Date: 07/05/02
 Art Unit: 1653 Phone Number 301 803213 Serial Number: 09/424181
 Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL

Mail Box: 9B01; Exr Rm: 9B05

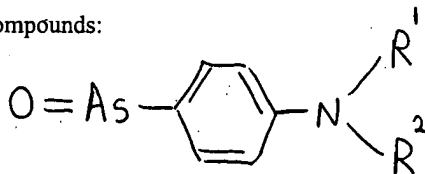
If more than one search is submitted, please prioritize searches in order of need.

Title of Invention: Inhibition of cell surface protein disulfide isomerase

Applicants: ROGELJ, SNEZNA; SKLAR, LARRY A.; PALMER, ROBERT B.

Earliest Priority date: 5/14/97

Applicants are claiming the following compounds:

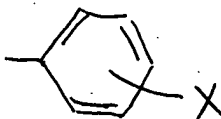


"As" = an atom of arsenic

R1 = anything

R2 = $-(\text{CH}_2)_n-\text{X}$

or



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wherein "n" is an integer of 1 - 6; and

wherein "X" is any of the following:

 $-\text{SO}_3\text{H}$ or $-\text{COOH}$ or $-\text{OPO}_3\text{H}_2$ or $-\text{NH}_2$

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

STAFF USE ONLY

| | Type of Search | Vendors and cost where applicable |
|---|------------------------|-----------------------------------|
| Searcher: <u>Jan</u> | NA Sequence (#) _____ | STN <u>✓</u> |
| Searcher Phone #: <u>4458</u> | AA Sequence (#) _____ | Dialog _____ |
| Searcher Location: _____ | Structure (#) <u>✓</u> | Questel/Orbit _____ |
| Date Searcher Picked Up: <u>7/19/02</u> | Bibliographic _____ | Dr. Link _____ |
| Date Completed: <u>7/15/02</u> | Litigation _____ | Lexis/Nexis _____ |
| Searcher Prep & Review Time: _____ | Fulltext _____ | Sequence Systems _____ |
| Clerical Prep Time: <u>60</u> | Patent Family _____ | WWW/Internet _____ |
| Online Time: <u>+10</u> | Other _____ | Other (specify) _____ |

=> fil reg

FILE 'REGISTRY' ENTERED AT 06:34:31 ON 09 JUL 2002

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STRUCTURE FILE UPDATES: 7 JUL 2002 HIGHEST RN 437604-49-4

DICTIONARY FILE UPDATES: 7 JUL 2002 HIGHEST RN 437604-49-4

TSCA INFORMATION NOW CURRENT THROUGH January 7, 2002

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

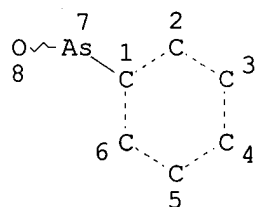
Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d sta que 126

L18 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

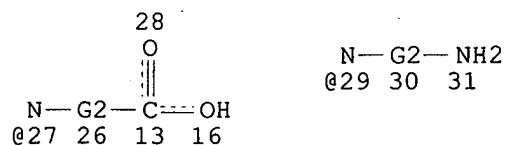
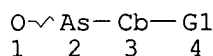
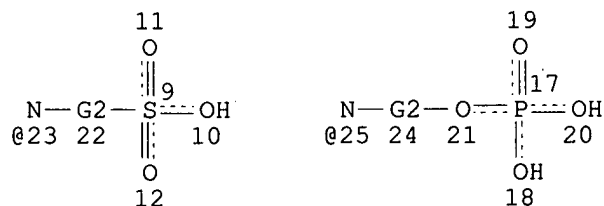
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L19 SCR 1992

L21 2521 SEA FILE=REGISTRY SSS FUL L18 AND L19

L22 STR



VAR G1=23/25/27/29

VAR G2=AK/CB

NODE ATTRIBUTES:

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

CONNECT IS M1 RC AT 23
CONNECT IS M1 RC AT 25
CONNECT IS M1 RC AT 27
CONNECT IS M1 RC AT 29
DEFAULT MLEVEL IS ATOM
GGCAT IS MCY UNS AT 3
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 25

STEREO ATTRIBUTES: NONE

L25 34 SEA FILE=REGISTRY SUB=L21 SSS FUL L22
L26 5 SEA FILE=REGISTRY ABB=ON PLU=ON L25 AND (C7H8ASNO4S OR
C9H12ASNO4S OR C10H14ASNO4S OR C8H10ASNO4S OR C12H18ASNO4S)

=> d his

(FILE 'HOME' ENTERED AT 06:16:06 ON 09 JUL 2002)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 06:16:22 ON 09 JUL 2002

E ROGELJ S/AU
L1 19 S E3,E4
E SKLAR L/AU
L2 181 S E3-E11
E PALMER R/AU
L3 177 S E3,E5
L4 69 S E81,E84,E85
L5 1312 S PROTEIN(L) (DISULFIDE OR DISULPHIDE) (L) ISOMERASE

FILE 'REGISTRY' ENTERED AT 06:18:41 ON 09 JUL 2002

L6 1 S 37318-49-3

FILE 'HCAPLUS' ENTERED AT 06:19:35 ON 09 JUL 2002

L7 974 S L6
L8 1350 S (DISULFIDE OR DISULPHIDE) (L) ISOMERASE
L9 5 S "S S REARRANGASE" OR FOLDASE(L) ERP57 OR ERP57 THIOL OXIDOREDU
L10 62 S (EC OR "E C") () 5 3 4 1
L11 1369 S L5,L7-L10
L12 3 S L1-L4 AND L11
L13 3 S PDI AND L1-L4
L14 3 S L12,L13
SEL RN

FILE 'REGISTRY' ENTERED AT 06:22:02 ON 09 JUL 2002

L15 33 S E1-E33
L16 11 S L15 AND AS/ELS
L17 8 S L16 AND 46.150.18/RID AND N/ELS
L18 STR
L19 SCR 1992
L20 50 S L18 AND L19
L21 2521 S L18 AND L19 FUL
SAV L21 LUKTON424/A
L22 STR
L23 0 S L22 CSS SAM SUB=L21
L24 2 S L22 SAM SUB=L21
L25 34 S L22 FUL SUB=L21
SAV L25 LUKTON424A/A
L26 5 S L25 AND (C7H8ASNO4S OR C9H12ASNO4S OR C10H14ASNO4S OR C8H10AS
L27 8 S L15 AND L21

L28 3 S L27 NOT L26

FILE 'HCAOLD' ENTERED AT 06:32:27 ON 09 JUL 2002

L29 0 S L26

FILE 'REGISTRY' ENTERED AT 06:32:56 ON 09 JUL 2002

L30 2 S L28 NOT C6H6ASNO

FILE 'USPATFULL, USPAT2' ENTERED AT 06:33:34 ON 09 JUL 2002

L31 0 S L26

L32 0 S L30

FILE 'HCAPLUS' ENTERED AT 06:33:44 ON 09 JUL 2002

L33 1 S L26

L34 1 S L30

L35 1 S L33, L34

L36 1 S L35 AND L1-L5, L7-L14

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=> d ide can tot 126

L26 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2002 ACS

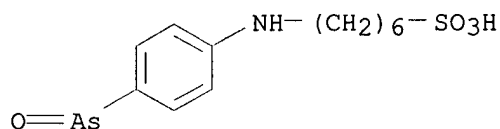
RN 216162-83-3 REGISTRY

CN 1-Hexanesulfonic acid, 6-[(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)

MF C12 H18 As N O4 S

SR CA

LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:10612

L26 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2002 ACS

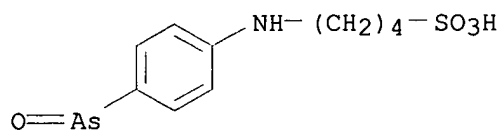
RN 216162-82-2 REGISTRY

CN 1-Butanesulfonic acid, 4-[(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)

MF C10 H14 As N O4 S

SR CA

LC STN Files: CA, CAPLUS



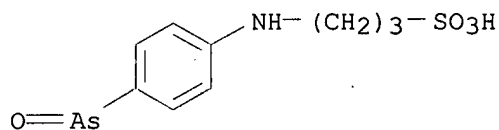
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1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:10612

L26 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2002 ACS

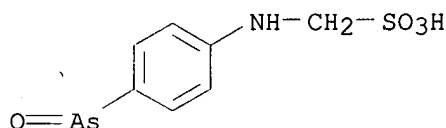
RN 216162-81-1 REGISTRY
 CN 1-Propanesulfonic acid, 3-[(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)
 MF C9 H12 As N O4 S
 SR CA
 LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:10612

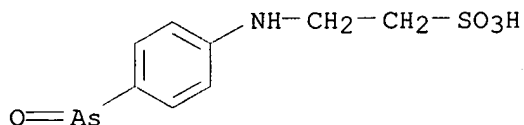
L26 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2002 ACS
 RN 216162-80-0 REGISTRY
 CN Methanesulfonic acid, [(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)
 MF C7 H8 As N O4 S
 SR CA
 LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:10612

L26 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2002 ACS
 RN 216162-78-6 REGISTRY
 CN Ethanesulfonic acid, 2-[(4-arsenosophenyl)amino]-, monosodium salt (9CI) (CA INDEX NAME)
 MF C8 H10 As N O4 S . Na
 SR CA
 LC STN Files: CA, CAPLUS



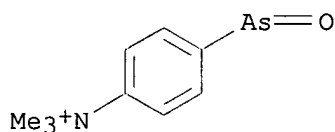
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1 REFERENCES IN FILE CA (1967 TO DATE)
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REFERENCE 1: 130:10612

=> d ide can tot 130

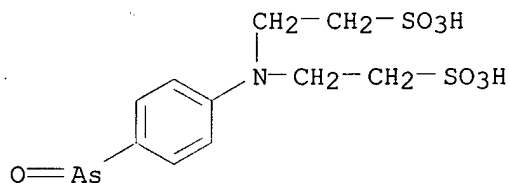
L30 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2002 ACS
RN 216162-84-4 REGISTRY
CN Benzenaminium, 4-arsenoso-N,N,N-trimethyl- (9CI) (CA INDEX NAME)
MF C9 H13 As N O
SR CA
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:10612

L30 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2002 ACS
RN 216162-79-7 REGISTRY
CN Ethanesulfonic acid, 2,2'-[(4-arsenosophenyl)imino]bis- (9CI) (CA INDEX NAME)
MF C10 H14 As N O7 S2
SR CA
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:10612

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 06:34:52 ON 09 JUL 2002
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FILE COVERS 1907 - 9 Jul 2002 VOL 137 ISS 2
FILE LAST UPDATED: 8 Jul 2002 (20020708/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d all hitstr l36

L36 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:764276 HCAPLUS
DN 130:10612
TI Inhibition of cell surface **protein disulfide isomerase**
IN Rogelj, Snezna; Sklar, Larry A.
PA The University of New Mexico; USA
SO PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-285
CC 1-5 (Pharmacology)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 9851297 | A1 | 19981119 | WO 1998-US9795 | 19980514 |
| | W: CA, JP, US | | | | |
| | RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| | EP 981344 | A1 | 20000301 | EP 1998-921188 | 19980514 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |
| PRAI | US 1997-46487P | P | 19970514 | | |
| | WO 1998-US9795 | W | 19980514 | | |
| OS | MARPAT 130:10612 | | | | |
| AB | The invention provides anti-thiol reagents which inhibit enzyme activity of cell-assocd. protein disulfide isomerase (PDI) by oxidizing or blocking PDI active site vicinal thiol groups which normally participate in disulfide bond rearrangement of PDI substrates. Inhibition of this PDI function is particularly useful in blocking PDI -mediated entry of HIV or other virions into a host cell. The invention further provides an assay for the identification of such PDI inhibitors based on the discovery that inhibitors of the invention also induce shedding of the leukocyte L-selectin adhesion mol. | | | | |
| ST | virion HIV entry host cell drug inhibition; protein disulfide isomerase inhibitor prepn HIV antiviral | | | | |
| IT | Glycoproteins, specific or class RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process) (ICAM (intercellular adhesion mol.); inhibition of cell surface protein disulfide isomerase (PDI) and PDI -mediated HIV entry into host cells) | | | | |
| IT | Selectins RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process) | | | | |

(L-, shedding; inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

IT Enzyme functional sites
(active; inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

IT Antibodies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(anti-L-selectin; inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

IT Immunoassay
(enzyme-linked immunosorbent assay; inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

IT Antiviral agents
Human immunodeficiency virus
Lymphocyte
Structure-activity relationship
(inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

IT 110156-11-1P **216162-78-6P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

IT **216162-79-7 216162-80-0 216162-81-1**
216162-82-2 216162-83-3 216162-84-4
216162-85-5
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

IT **37318-49-3, Protein disulfide isomerase**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

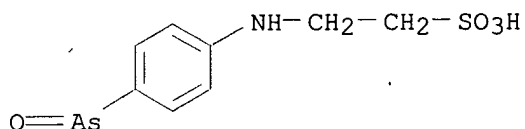
IT 69-78-3 74-61-3 637-03-6, Phenylarsine oxide 1122-90-3 4263-52-9, 2-Bromoethanesulfonic acid sodium salt
RL: RCT (Reactant); RACT (Reactant or reagent)
(inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Brown; US 5532154 A 1996 HCAPLUS
(2) Kalef, E; Analytical Biochemistry 1993, V212, P325 HCAPLUS

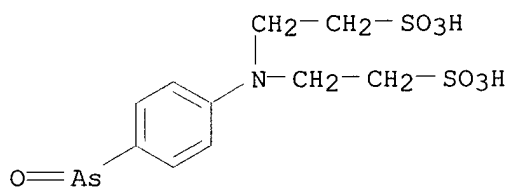
IT **216162-78-6P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(inhibition of cell surface **protein disulfide isomerase (PDI)** and **PDI**-mediated HIV entry into host cells)

RN 216162-78-6 HCAPLUS
 CN Ethanesulfonic acid, 2-[(4-arsenosophenyl)amino]-, monosodium salt (9CI)
 (CA INDEX NAME)

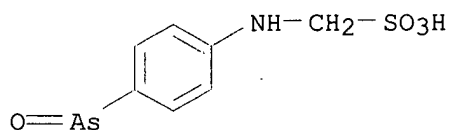


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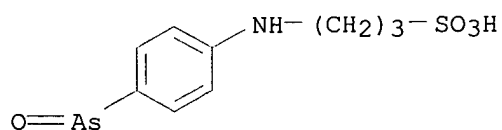
IT 216162-79-7 216162-80-0 216162-81-1
 216162-82-2 216162-83-3 216162-84-4
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (inhibition of cell surface **protein disulfide isomerase** (PDI) and PDI-mediated HIV entry into host cells)
 RN 216162-79-7 HCAPLUS
 CN Ethanesulfonic acid, 2,2'-[(4-arsenosophenyl)imino]bis- (9CI) (CA INDEX NAME)



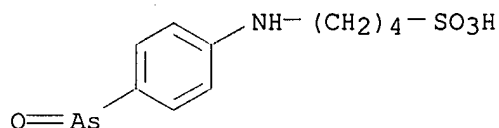
RN 216162-80-0 HCAPLUS
 CN Methanesulfonic acid, [(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)



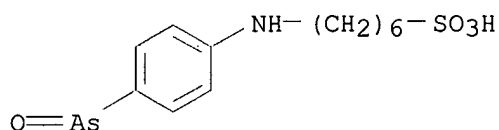
RN 216162-81-1 HCAPLUS
 CN 1-Propanesulfonic acid, 3-[(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)



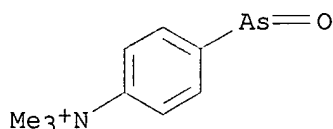
RN 216162-82-2 HCAPLUS
 CN 1-Butanesulfonic acid, 4-[(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)



RN 216162-83-3 HCAPLUS
 CN 1-Hexanesulfonic acid, 6-[(4-arsenosophenyl)amino]- (9CI) (CA INDEX NAME)



RN 216162-84-4 HCAPLUS
 CN Benzenaminium, 4-arsenoso-N,N,N-trimethyl- (9CI) (CA INDEX NAME)



IT 37318-49-3, **Protein disulfide isomerase**
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (inhibition of cell surface **protein disulfide isomerase** (PDI) and PDI-mediated HIV entry into host cells)
 RN 37318-49-3 HCAPLUS
 CN Isomerase, protein disulfide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

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STRUCTURE FILE UPDATES: 7 JUL 2002 HIGHEST RN 437604-49-4
 DICTIONARY FILE UPDATES: 7 JUL 2002 HIGHEST RN 437604-49-4

TSCA INFORMATION NOW CURRENT THROUGH January 7, 2002

Please note that search-term pricing does apply when
 conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
 for more information. See STNote 27, Searching Properties in the CAS
 Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d ide can 16

L6 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS
RN 37318-49-3 REGISTRY
CN Isomerase, protein disulfide (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Disulfide isomerase
CN E.C. 5.3.4.1
CN ERp57 thiol oxidoreductase
CN Foldase ERp57
CN Protein disulfide isomerase
CN S-S-Rearrangase
MF Unspecified
CI MAN
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA,
CAPLUS, CEN, CHEMCATS, CIN, CSCHEM, EMBASE, IFICDB, IFIPAT, IFIUDB,
PROMT, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
972 REFERENCES IN FILE CA (1967 TO DATE)
15 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
974 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:10704
REFERENCE 2: 137:2355
REFERENCE 3: 137:1302
REFERENCE 4: 137:1242
REFERENCE 5: 136:399500
REFERENCE 6: 136:398947
REFERENCE 7: 136:382518
REFERENCE 8: 136:381974
REFERENCE 9: 136:381035
REFERENCE 10: 136:368483